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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,331	03/22/2004	Hiroshi Nakayama	016907-1636	9097
22428	7590	12/22/2004	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			LEE, PETER	
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/805,331

Applicant(s)

NAKAYAMA, HIROSHI

Examiner

Peter Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/22/2004
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

Figure 1 contains the reference number 140 not found in the specifications.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

On page 4 lines 26 and 27 reference is made to parts 141 and 142 of figure 1, but can not be found in the referred figure.

On page 5 line 15 the "operating panel 80" is mentioned but not actually in figure 6.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing

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sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 6, 7, 8, 9, are rejected under 35 U.S.C. 102(b) as being anticipated by Toizumi (US pn 6011938).

Toisumi teaches an image forming apparatus (as seen in Fig. 6) comprising: a photosensitive drum (fig. 6 part 15) (ie. forming unit) onto which a toner image is electrostatically made and transferred to a transfer drum (fig. 6 part 11) and then to a sheet paper (col. 7 lines 25-45) (ie. recording medium); a fixing device (fig. 6 part 4) for performing heat fixing the toner image on the sheet paper (col. 7 lines 51-56); and a heat drive circuit (fig. 5 part 45) (ie. control unit) that takes the signal from a heat detection sensor (fig. 5 part 44; note: col. 8 lines 35-45) and converts values to be compared to those in a look up table (fig. 6 part 48), and uses the compared values to determine the power being supplied to a heater lamp (fig. 5 part 43)

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(ie. temperature control of the fixing unit based on a table) inside of a heat roller of the fixing device. The look up table is taught to store the value corresponding to a set of predetermined temperatures, along with values for power to be supplied to the heater lamp in response to the results of a comparison circuit (fig. 6 part 49) (col. 8 lines 47-53).

Toizumi also teaches that an image forming operation is possible once the heat roll reaches a first set temperature (col. 11 lines 40-44) (ie. heating the recording medium when the fixing unit reaches a predetermined temperature). However, when a temperature of the heat roll (fig. 5 part 41) is known to be higher than a predetermined value, the temperature control reduces the power sent to it according to the look up table (fig. 6 part 48) in order to lower the temperature to another value (col. 12 lines 15-23) (ie. when temperature change of the table is greater than a predetermined value, the control unit stops rising the temperature of the fixing unit).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 4, 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toizumi in view of Nishida et al (US pn 6301454).

Toizumi, among other things, teaches all of the limitations from which the above claims

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depend upon. Toizumi does not teach the fixing roller containing a heater to control a central portion of the roller and separately controlled heaters to heat both the end portions. Nor does he teach the practice of alternately rising the temperatures of the two heaters.

It is Nishida who teaches a fixing unit (fig. 1) with a heater roller (fig. 1 part 1) that contains within it two heaters, one main heater (fig. 1 part 2) (ie. heater which heats central portion) and one sub heater (fig. 1 part 3) (ie. heater which heats both ends). Nishida also teaches a fixing heater controlling method that has a first period in which only the first main heater is driven, and a second time period following the first where only the second sub heater is driven (col. 3 lines 50-55) (ie. control unit alternately carries out rising temperatures).

It would have been obvious to a person of ordinary skill at the time the invention was made to include two heaters inside of a heater/fixing roller and alternate the heating between the two as taught by Nishida, and use them in a fixing device as taught by Toizumi. Although the two fixing devices are not exactly the same, they both are of the same field of being used to fix a toner image onto a paper sheet, and it is very possible and obvious for a controller taught in the invention of Toizumi to handle the alternating powering between two heaters if they were to be within a fixing roller. One of ordinary skill in the art would have been motivated to do this in order to prevent unwanted rush currents during initial start ups (col. 3 line 63-col. 4 line 5).

5. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toizumi in view of Sawamura et al. (US pn 6061546).

Toizumi teaches all of the limitations from which the above claims depend upon.

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However, Toizumi does not explicitly teach using temperature sensors for either a photosensitive drum or a recording medium housing cassette to control the temperature of a fixing unit.

It is Sawamura who teaches an image forming apparatus that utilizes various sensors, one of them being a photosensitive drum temperature sensor (fig. 1 part 40), to send to a control section (fig. 1 part 50) that will maintain a desirable temperature in the fusing roller (col. 11 lines 19-25 and lines 35-45) (ie. temperature control of fixing unit in consideration of at least a signal from a temperature sensor of a photosensitive drum).

Although the first reference, Toizumi, does not teach the use of cooling fans inside of the image forming apparatus, this feature is well known in the art as taught by the second reference, Sawamura; and the two references Toizumi and Sawamura are analogous art because they both are from the same field of image forming apparatuses that utilize a controlling means to adjust a fixing temperature. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include cooling fans to cool the inside of an image forming apparatus, as taught by Toizumi; and further to modify the heat drive circuit of the image forming apparatus taught by the base reference Toizumi, to operate according to a photosensitive drum temperature sensor to turn on and off cooling fans as taught by Sawamura. One of ordinary skill in the art would have been motivated to locate a temperature sensor for a photosensitive drum in order to adjust the temperature to prevent condensation on the drum (col. 11 lines 35-45). One of ordinary skill in the art would have been motivated to also have a controlling unit (ie. heat drive circuit) consider a temperature of a photosensitive drum as taken by a sensor to control a temperature of a fixing unit because this temperature plays a part in the overall temperature

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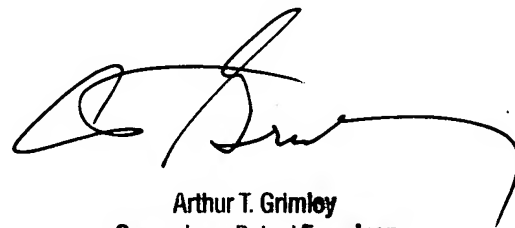
inside the apparatus which may lead to unwanted overheating of the thermal fuser (col. 11 lines 19-25).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Lee whose telephone number is 571-272-2846. The examiner can normally be reached on mon-fri 9:00 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on 571-272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PL 12/10/04



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